

Ref.

OPINIONS AND DECLARATIONS RENDERED BY THE INTER- NATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

Edited by

FRANCIS HEMMING, C.M.G., C.B.E.

Secretary to the Commission

VOLUME 3. Part 8. Pp. 93-108.

OPINION 189

Suspension of the rules for *Arca* Linnaeus, 1758
(Class Pelecypoda, Order Filibranchiata)

LONDON:

Printed by Order of the International Commission on
Zoological Nomenclature

Sold at the Publications Office of the Commission
41, Queen's Gate, London, S.W.7

1945

Price four shillings

(All rights reserved)

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

COMPOSITION OF THE COMMISSION

The Officers of the Commission

President : Dr. Karl Jordan, Ph.D., F.R.S. (United Kingdom).

Vice-President : Dr. James L. Peters (U.S.A.).

Secretary : Mr. Francis Hemming, C.M.G., C.B.E. (United Kingdom).

The Members of the Commission

Class 1946

Herr Professor Dr. Walter ARNDT (Germany).

Dr. William Thomas CALMAN (United Kingdom).

Professor Teiso ESAKI (Japan).

Professor Béla von HANKÓ (Hungary).

Dr. Tadeusz JACZEWSKI (Poland).

Dr. Norman R. STOLL (U.S.A.).

Class 1949

Senor Dr. Angel CABRERA (Argentina).

Mr. Francis HEMMING (United Kingdom) (*Secretary to the Commission*).

Dr. Karl JORDAN (United Kingdom) (*President of the Commission*).

Dr. Joseph PEARSON (Australia).

Monsieur le Docteur Jacques PELLEGRIN (France).

Herr Professor Dr. Rudolf RICHTER (Germany).

Class 1952

Senhor Dr. Afranio do AMARAL (Brazil).

Professor James Chester BRADLEY (U.S.A.).

Professor Ludovico di CAPORIACCO (Italy).

Professor J. R. DYMOND (Canada).

Dr. James L. PETERS (U.S.A.) (*Vice-President of the Commission*).

Dr. Harold E. VOKES (U.S.A.)

Secretariat of the Commission :

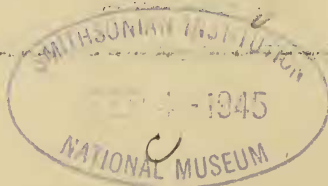
British Museum (Natural History), Cromwell Road, London, S.W. 7.

Publications Office of the Commission :

41, Queen's Gate, London, S.W. 7.

Personal address of the Secretary :

83, Fellows Road (Garden Flat), London, N.W. 3.



OPINION 189.

SUSPENSION OF THE RULES FOR *ARCA* LINNAEUS, 1758 (CLASS PELECYPODA, ORDER FILIBRANCHIATA).

SUMMARY.—Under suspension of the rules (i) all type designations for the genus *Arca* Linnaeus, 1758 (Class Pelecypoda, Order Filibranchiata), made prior to the date of this *Opinion* are hereby set aside and (ii) *Arca noae* Linnaeus, 1758, is hereby designated as the type of that genus. The name *Arca* Linnaeus, with the type designated above, is hereby added to the *Official List of Generic Names in Zoology* as Name No. 622.

I.—THE STATEMENT OF THE CASE.

This case was submitted to the International Commission on Zoological Nomenclature by Dr. Philip W. Reinhart, Stanford University, California, in the following letter dated 24th June 1932 :—

The purpose of this letter is to place before you the facts concerning the designation of a pelecypod genus *Arca*, in the hope that the International Commission on Zoological Nomenclature will take the step necessary for the stabilization of the nomenclature of this genus, which is at present in a confused condition, due to lack of agreement among systematists as to whether *Arca noae* or *A. antiquata* should be regarded as the type of the genus.

Since 1847, *Arca noae* Linnaeus had been accepted almost universally as the type species of *Arca*, following the designation of Gray (1847, *Proc. zool. Soc. Lond.* 15 : 197). This same species had previously been designated as the type of *Arca* by Schmidt (1818, *Versuch Einricht. Conchyl.-Samml.* : 65, 178) but this designation seems to have been overlooked by most systematists. At any rate, Gray's designation, as mentioned above, was almost universally accepted.

Within the last five years, however, there has been brought to light the fact that two other species have been designated as the type of *Arca* previous to 1847, one of these even before Schmidt's designation of 1818 :

- (1) Cox (1927, *Pal. Zanzibar* : 93) pointed out that Children had designated *A. tortuosa* Linnaeus the type of *Arca* in 1823 (*Lamarck's Gen. Shells* : 46); and
- (2) Stewart in 1930 (*Acad. nat. Sci. Philad. Spec. Publ.* 3 : 83) and Grant and Gale in 1931 (*Mem. San Diego Soc. nat. Hist.* 1 : 137) disclosed the fact that *A. antiquata* Linnaeus had been designated the type species by Schumacher in 1817 (*Essai nouv. Syst. Vers test.* : 172).

Inasmuch as Schumacher's designation of *A. antiquata* antedates Schmidt's of *A. noae* by one year, *A. antiquata* (which since 1847 has been regarded as type of the subgenus *Anadara*) has been accepted as the typical

species of *Arca* by Grant and Gale and by Stewart, although Stewart was reluctant at the change, and expressed the hope (*loc. cit.* 3 : 85) that the International Commission would restore the genus *Arca* to its former well-known status by arbitrarily establishing *A. noae* as the type species.

I shall now quote the reasons, as brought forward by Stewart, for restoring *A. noae* as type species. Stewart (*loc. cit.* 3 : 84) :—

The first serious student of *Arca*, after Linné, seems to have been Martini (*Beschrft., Berl. Ges. Naturf. Fr. v. 3, 1777, pp. 283-298*), who recognised *A. noae* and *A. barbata* as the true arks—"wahren Archen"—and separated them on the basis of the width of the ligamental area into "Die ächte Noachsarche"—*A. noae*—and "Die bartige Noachsarche"—*A. barbata*. Martini's statement is practically a subsequent type designation for *Arca* but the word type was not used. Chemnitz¹ also placed *A. noae* in his "*Arcae verae*" but not as the first species, retaining the first species of Linné as his first species (*Conch.-Cab. v. 7, 1784, p. 165, 177, pl. 53, fig. 529-531, pl. 54, fig. 532-533*). In the "Museum Boltenianum," *A. noae* is the first species under the second division, called "Verae. Die wahren Archen" (p. 174).

In 1799 and 1801 Lamarck cited *A. noae* as an example of *Arca*. As was mentioned previously, Gray in 1847 (*Proc. zool. Soc. Lond.* 15 : 197) designated *A. noae* type of the genus. This species was also used as type by :

Woodward, Stoliczka, Kobelt, Dall, and Lamy, while K. and A. Adams, Tryon, Fischer, and Bucquoy, Dautzenberg and Dollfuss placed *A. noae* in *Arca*.s.s. Until the recent revival of Children's type designation (Cox, in *Pal. Zanzibar, 1927, p. 93*) it is doubtful if there has been a single worker since 1847 who has not regarded *A. noae* as the typical *Arca*. (Stewart, *loc. cit.* 3 : 85).

Stewart summarizes this matter as follows (: 85) :—

The popularity of *Arca noae* as type species for *Arca* is due to two factors—the first, its citation by Lamarck in 1799 and 1801 has undoubtedly influenced subsequent workers, while the second factor, the obvious association of the name *Arca* with *A. noae*, influenced 18th century workers as well as modern students. The first subsequent type designation yet found, seems so unfortunate that it may be reasonable to expect that for this case the International Commission on Zoological Nomenclature will waive the rules. *Arca noae* as type species for *Arca* has in its favor, virtual tautonymy and a long standing precedence as well as a virtual type designation by Martini in 1777. Against it is one type designation (1817) with but a year's priority if Schmidt's type designation be accepted (1818). Disregarding Schmidt, there would be three type designations, each for a different species, prior to the designation of *A. noae*. To arbitrarily establish *A. noae* as type species for *Arca* would not be such a radical step as the Commission has already taken in favor of the generic name *Spirifer* (*Opin.* 100).

I hope that the Commission, on reviewing the above facts, will consider it advisable to follow Stewart's suggestion to establish *A. noae* as type of *Arca* : such an action would stabilize the present unsettled condition. If this step is not taken, much confusion will undoubtedly result, because many systematists feel that the evidence in favor of *A. noae* as type is fully as strong as, if not stronger than, that in favor of *A. antiquata*, and it appears that only through a ruling by the Commission will the matter be definitely settled.

II.—THE SUBSEQUENT HISTORY OF THE CASE.

2. On receiving the application quoted in paragraph 1 above, Dr. C. W. Stiles, as Secretary to the Commission, took steps to

¹ For the ruling by the International Commission on the status of names in volumes 1 to 11 of Martini (F. H. W.) and Chemnitz (J. H.), *Neues systematisches Conchylien-Cabinet*, 1769-1795, see *Opinion* 184 (pp. 25-36 of the present volume).

ascertain the views of representative specialists interested in this question. The following letters on this subject were received by the Commission during the period from September 1932 to January 1935 :—

- (a) *Comment by Dr. Paul Bartsch, Curator of Mollusks and Cenozoic Invertebrates, United States National Museum, Washington*
(2nd September 1932)

Any one working with the genus *Arca* is thoroughly familiar with the problem which has been very clearly presented by Dr. Stewart. Refer to his statement which you will find in Reinhart's letter.

When the genus *Arca* will have been re-monographed—that is the family given a thorough modern overhauling—a number of changes will have to be made and some of the things will have to be juggled about. At the present time, it does seem to all of us who have worked in this field that it would probably be best to suppress the older type designation and give precedence to Gray's type designation, *Arca noae*. If we do this, we have another exception and personally I am disinclined towards exceptions, but I would be ready to vote in favor of the exception had I a voice in the matter.²

- (b) *Comment by Dr. Henry A. Pilsbry, Curator, Department of Mollusks and Marine Invertebrates, Academy of Natural Sciences of Philadelphia* (9th January 1933)

In the case of *Arca*, I believe that the interests of science would be best served by a decision in favor of using *A. noae* as the genotype. The arcas of this type were commonly known as "Noah's ark shells" in pre-Linnean times. It appears to me that Linnaeus' citation of "Arca Noae" Rumphius in his synonymy of *Arca noae* should be a sufficient indication to make this species type by tautonymy. See *Syst. Nat.* (10) p. 693.³

² On 3rd February 1936 Dr. Bartsch wrote to Dr. Stiles (who was then in Florida) asking whether it was the fact that the Commission were contemplating "sanctioning and sponsoring an exception against *Navicula*." Dr. Bartsch added: "*Navicula* is a splendid little group with a fine geological history and beyond question creating no more confusion by conservation than suppression. Hold on to it!" On his return to Washington, Dr. Stiles replied on 21st February 1936 that according to the records at his disposal it appeared that the case of *Navicula* had only come before the Commission "in connection with *Arca*." With the same letter Dr. Stiles enclosed a copy of the "Circular Letter" which in the meanwhile he had issued to Members of the Commission in which he had quoted the comments so far received from specialists in regard to the proposal for the suspension of the rules in the case of *Arca* Linnaeus. Dr. Stiles added that this case had not been dealt with by the Commission at their meeting held at Lisbon in September 1935 and that it was therefore open to Dr. Bartsch to furnish to the Commission any further observations that he might desire. To this letter, Dr. Bartsch replied on 11th May 1936 as follows: "The maturer judgment of a year after and the fact that *Navicula* is involved also in this case, of which *Arca noae* is the type, I would strike out the last part of my dictum and say, 'Stick to the rules.'"

³ In connection with this aspect of the case, see the observation by Commissioners Jordan and Richter quoted in paragraph 4 below.

Any other course will introduce confusion by shifting the name *Arca* to the genus now called *Anadara*. Both of these names are in general and very wide use. If such confusion can lawfully be avoided, a decision now would be particularly timely since the changes proposed by Cox and Stewart have had scarcely any followers as yet.

- (c) *Comment by Dr. G. D. Hanna, Curator, Department of Palaeontology, California Academy of Sciences, San Francisco*
(4th February 1933)

Dr. Pilsbry tells me that the Commission has under consideration the question of the type species of the genus *Arca*. The name is involved with the name *Navicula*, and I hope that it will be possible for the species *noae* to be designated as the type.

- (d) *Comment by Dr. W. P. Woodring, Geological Survey, United States Department of the Interior, Washington* (1st March 1933)

I am in favor of accepting *Arca noae* as the type of *Arca*.

- (e) *Comment by Dr. Mary J. Rathbun, United States National Museum, Washington* (3rd March 1933)

I feel pretty sure that the International Commission will abide by its rules. That means that *antiquata* will be accepted as the type of *Arca*. The Commission is not allowed to choose one of two, as Martini's *noae* and *barbata*, and it insists on the word "type." Lamarck's "examples" are never construed as "types."

- (f) *Comment by Mr. L. R. Cox, Department of Geology, British Museum (Natural History)* (11th March 1933)

I am not in favour of submitting cases for suspension of the rules to the International Commission *ad infinitum*, but quite agree that this is a case which should be submitted, since it is one in which the application of the rules is ambiguous.

Schumacher's alleged type-designation is very unsatisfactory. He does not say "I take the species *A. antiquata* as type of the genus *Arca*" but something to the effect that "as type of the genus I take the figure of the hinge of *A. antiquata* given by Chemnitz"; in other words, he does not use the word "type" in the sense "genotype," but merely means that he regards a certain type of hinge as characteristic of the genus. There also seems to be an objection to Schmidt's designation, namely, that he names two types for *Arca*, one of which, however, is not in the original Linnean list.

In the circumstances, therefore, I fully agree that it will be desirable to apply to the International Commission for a definite ruling as to what species shall be considered as genotype of *Arca*; and, of course, the species which should be named is the one until recently accepted by most authors, namely, *A. noae*.

- (g) *Comment by Professor P. Dautzenberg, Musée National d'Histoire Naturelle (a former member of the International Commission)*
(dated 18th April 1933)

Pour le nom générique *Arca*, je partage absolument l'avis du Dr. R. Stewart et je suis bien décidé à lui conserver le sens qui lui a été donné pendant plus d'un siècle par les malacologistes.

Une application trop stricte de la loi de priorité a produit de résultats désastreux. A mon avis, la loi de priorité quelque respectable qu'elle soit, doit être pratiquée avec circonspection et en tenant compte de la valeur relative des oeuvres scientifiques. Mais quelques naturalistes désirant de créer du nouveau, ont recueilli des publications plus or moins estimables, les moyens de démolir des noms biens connus et universellement employés en leur en substituant d'autres qui ne méritent vraiment pas d'être resuscités.

Le Dr. K. Apstein a fait paraître en 1915 une liste ⁴ de *Nomina conservanda* a laquelle je me rallie sans restrictions. Le genre *Arca* y figure avec *A. noae* comme type.

(h) *Comment by Commissioner F. A. Bather, Keeper, Department of Geology, British Museum (Natural History) (9th May 1933)*

According to the information before me, I agree with Mr. Cox that Schumacher cannot be considered to have selected *A. antiquata* as genotype. Schumacher did not select a species as type, he did not even select a specimen of a species,⁵ or even the figure of a specimen of a species, but he merely referred to the figure of the hinge on a particular specimen. I do not see how, under the rules, this could be taken as a designation of the type. Unless some stronger argument in favour of the change is put forward, I should certainly vote in favour of retaining *Arca noae* as the genotype.

(i) *Comment by Dr. Hubert G. Schenck, Department of Geology, Stanford University, California (8th January 1935)*

Recently while in Europe I began a study of certain Pelecypods, and I completed a preliminary manuscript which I should like to enlarge for publication in the near future. However it involves the question of what is the type of *Arca*. Upon my return to this institution I was informed that Dr. P. W. Reinhart had taken this matter up with you some time ago and that it seems possible that the species *noae* will be taken as the type of the genus. This is the sentiment that I have in the matter, and I hope very much that the Commission will decide that way.

3. In February 1935 Dr. Stiles issued a "Circular Letter" (no. 278) on this subject to all members of the International Commission. This Circular Letter contained the text of Dr. Reinhart's application and the comments received from specialists quoted in paragraph 2 above. Dr. Stiles stated that, as he had been unable to examine the original citations involved in this case, he hesitated to draft an *Opinion*, but that the evidence received seemed to favour "*noae* as type of *Arca*." He accordingly invited Commissioners to vote on this question. At the same time he invited Commissioners to furnish supplementary observations on this case for incorporation in the *Opinion* when drafted.

⁴ The decision of the Commission on the "Apstein List" is given in *Opinion* 74.

⁵ Schumacher would have acted incorrectly (under the present Code) if he had selected a specimen rather than a species as the type of a genus. See *Opinions* 65 and 168.

4. The following comments were received in response to the foregoing invitation :—

(i) *Comment by Commissioner Karl Jordan :*

According to the literature quoted by Linnaeus, the name *Arca noae* was taken from Rumphius. The quotation of "*Arca Noae*" under the second species is tantamount to a type designation.

(ii) *Comment by Commissioner Rudolf Richter :*

In Verbindung mit "*Arca*" hat "*noae*" den Sinn von "*Arca noae*." Es besteht also eine Art von "*involvierter Tautonymie*." Daher sollte die Art *noae* L. as Genotyp von *Arca* gelten. In Gemeinschaft mit meinen zoologischen Kollegen Dr. Robert Mertens.

5. In March 1935 Dr. Stiles suggested that this case should be settled by the Commission at their Session due to be held at Lisbon in September of that year. Owing to the exceptionally heavy agenda and the short time available for meetings, the Commission were unable to deal with this case during their Lisbon Session. It was accordingly arranged that a decision should be obtained by means of the postal ballot which (as explained in paragraph 3 above) had been opened in March of that year.

6. In May 1936 this case was duly advertised in the manner prescribed in proviso (a) to Article 1 of the Plenary Powers Resolution adopted by the Ninth International Congress of Zoology at its meeting held at Monaco in March 1913.⁶ No communication of any kind objecting to the suspension of the rules in favour of *Arca* Linnaeus was received by the Commission within the period of one year prescribed in the said Resolution.

7. Later the whole of the references involved in the case of *Arca* Linnaeus were checked by Commissioner Francis Hemming (*Secretary to the Commission*), with the kind assistance of Dr. L. R. Cox, Professor Hubert G. Schenck, Dr. P. W. Reinhart, Dr. A. Myra Keen, and Mr. R. Winckworth. This investigation showed that in all five authors have designated types for this genus or taken action which has since been interpreted as constituting type designations. The relevant particulars are given in the present paragraph and in paragraph 8 below :—

ARCA Linnaeus, 1758

Linnaeus, 1758, *Syst. Nat.* (ed. 10) : (1) : 693.

⁶ For the text of the Plenary Powers Resolution, see *Declaration 5* (1943, *Opinions and Declarations rendered by the International Commission on Zoological Nomenclature 1* : 31-40).

The genus, as constituted by Linnaeus, contained fifteen species (or nominal species) but (naturally) no type was specified. Of these species, the following only are relevant for the present purpose :—

- Species no. 1. *Arca tortuosa*
 : : 2. *Arca noae*
 : : 3. *Arca barbata*
 : : 6. *Arca antiquata*

8. The type designations and alleged type designations for this genus are as follows :—

- (1) Schumacher (C. F.), 1817, *Essai d'un nouveau Système des Habitations des Vers testacés* : 172

Pour le type du genre j'ai donné la fig. 2, Pl. xix, de la charnière de l'*Arca antiquata* Lin. qu'on trouve figurée dans Chemn. 7, pag. 201, Tab. 55, fig. 548.

- (2) Schmidt (F. C.), 1818, *Versuch über die beste Einrichtung der Conchylien-Sammlungen* : 65, 178

Two types cited : *Arca noae* Linnaeus for *Arca* Lamarck (= *Arca* Linnaeus, Lamarck) and *Arca rhomboidea* Gmelin, 1789, a non-Linnean species for *Arca* Megerle von Mühlfeld (= *Arca* Linnaeus, Megerle von Mühlfeld).

- (3) Children (J. G.), 1823, *Lamarck's Genera of Shells* : 46

Arca tortuosa Linnaeus, 1758, clearly designated as the type of *Arca* Linnaeus.

- (4) Anton (H. E.), 1839, *Verzeichniss der Conchylien in der Sammlung von H. E. Anton* : 13

Arca barbata Linnaeus, 1758, designated as the type of the nominal subgenus *Arca* Linnaeus, 1758 (*sensu stricto*) of the genus *Arca* Linnaeus, 1758. This designation was effected by the printing of the name *Arca barbata* in capital letters, in accordance with the system indicated by the author on p. vi of the Introduction, where the following statement will be found : "Gattungen, deren Typusart mit Versalbuchstaben gedruckt ist . . ."

- (5) Gray (J. E.), 1847, *Proc. zool. Soc. Lond.* 15 (178) : 197

Arca noae Linnaeus, 1758, is cited as the type of *Arca* Linnaeus, 1758.

9. The conclusions to be drawn from the foregoing evidence are as follows :—

- (i) Schumacher, 1817

Rule (g) in Article 30 of the International Code directs that "The meaning of the expression 'select the type' is to be rigidly construed." Schumacher's action does not comply with this requirement since (as observed by Calman *in litt.*, 12th February 1943) Schumacher on this occasion was clearly using the word "type" as the equivalent of "typical species" in the morphological or taxonomic sense, i.e. as the species in which the characters of the

genus are most fully developed or clearly shown. In naming *Arca antiquata* Linnaeus as the type of *Arca* Linnaeus, Schumacher had not in mind—or at least did not make it sufficiently clear for the purposes of rule (g) in Article 30 that he had in mind—to specify the above species as the genotype in the nomenclatorial sense, i.e. as the species to which the generic name *Arca* Linnaeus must adhere in the event of that genus being subdivided. The alleged type designation by Schumacher must therefore be rejected.

(ii) Schmidt, 1818

Schmidt specified a type for *Arca* Lamarck and another type for *Arca* Megerle von Mühlfeld. Neither of these authors himself erected a genus *Arca* and both must be regarded as having referred (implicitly if not explicitly) to Linnaeus. If this had not been the intention of these authors, the subsequent action of Schmidt could have had no possible bearing upon the type of *Arca* Linnaeus, since his action would have been concerned not with *Arca* Linnaeus but with two genera having the same name (*Arca*) published by two later authors. It is clear from Schmidt's action that he, like Schumacher, was using the term "type" to denote typical species in the morphological or taxonomic sense and not to denote the genotype of a genus. For this reason and because he designated two types (instead of one only), Schmidt's action does not constitute a type designation in the "rigidly construed" sense required by rule (g) in Article 30 of the Code. The alleged type designation by Schmidt must therefore be rejected.

(iii) Children, 1823

Children clearly designated as the type of *Arca* Linnaeus a species, *Arca tortuosa* Linnaeus, 1758, which was one of the species included in that genus by Linnaeus on the occasion (1758) when he first published the name *Arca* Linnaeus. Since, so far as is known, no other author had selected one of those species as the type of this genus, Children's action is a valid designation of the type of *Arca* Linnaeus, 1758, under rule (g) in Article 30 of the Code, and *Arca tortuosa* Linnaeus is therefore the type of *Arca* Linnaeus under the Code (i.e. in the absence of special action by the International Commission to suspend the rules under their plenary powers), unless it can be shown that some other species is the type of *Arca* Linnaeus under any of the earlier provisions of Article 30, i.e. under any of rules (a) to (f). (On this aspect of the question, see paragraphs 10-12 below.)

(iv) Anton, 1839 and Gray, 1847

The action of Anton (1839) under the Code in selecting *Arca barbata* Linnaeus as the type of *Arca* Linnaeus would have been valid, if it had not been for the prior (and, from the point of view of Article 30, valid) action of Children (1823) in selecting *Arca tortuosa* Linnaeus as the type of this genus. Similarly, Gray's action (1847) in selecting *Arca noae* Linnaeus as the type of *Arca* Linnaeus would have been valid, if Children (1823) had not selected *Arca tortuosa* Linnaeus as the type of that genus and if Anton (1839) had not selected *Arca barbata* Linnaeus as the type of that genus. In these circumstances, the action both of Anton and of Gray is invalid under the Code.

10. It will be seen from the foregoing analysis that, so far as rule (g) in Article 30 of the Code is concerned, there is

no doubt that under the Code *Arca tortuosa* Linnaeus, 1758, is the type of *Arca* Linnaeus, 1758. At this point, however, it is necessary to consider the bearing on the present case of the prior rules in Article 30. The only one of those rules which might have a bearing on the present case is rule (d), which relates to the fixing of genotypes by absolute tautonymy. This provision, which takes precedence over all subsequent rules in this Article of the Code, reads as follows:—

- (d) If a genus, without originally designated (see (a)) or indicated (see (b)) type, contains among its original species one possessing the generic name as its specific or subspecific name, either as a valid name or synonym, that species or subspecies becomes ipso facto type of the genus (type by absolute tautonymy).

11. As far back as 1930 Dr. Stewart (see *Acad. nat. Sci. Philad. Spec. Publ.* 3: 85, quoted in the penultimate paragraph of the application in the present case given in paragraph 1 of the present *Opinion*) drew attention to the virtual tautonymy in the present context of the words “*Arca*” and “*noae*.” The considerations advanced by Dr. Stewart have since been emphasised by Dr. Henry A. Pilsbry (see paragraph 2(b) above), by Commissioner Karl Jordan (see paragraph 4(i) above) and by Commissioner Rudolf Richter (see paragraph 4(ii) above).

12. A certain degree of tautonymy is undoubtedly created by the use simultaneously of the generic name “*Arca*” and the specific name “*Arca noae*” but, in the absence of an *Opinion* by the International Commission, there is no means of determining whether the degree of tautonymy so created is sufficient to constitute “absolute tautonymy” within the meaning of rule (d) in Article 30 of the Code.

13. The position is therefore that, pending a decision by the International Commission, it is, and must remain, a matter of doubt whether the type of *Arca* Linnaeus, 1758, is:—

- (i) *Arca noae* Linnaeus, 1758, by absolute tautonymy under rule (d) in Article 30 of the Code; or
 (ii) *Arca tortuosa* Linnaeus, 1758, by subsequent designation (by Children, 1823) under rule (g) in Article 30 of the Code.

14. In the present application the Commission were asked to consider—and in fact have considered—whether the strict application of the rules in the case of *Arca* Linnaeus, 1758, would result in greater confusion than uniformity and, if, in their judgment, such confusion would clearly arise, how best they should

use their plenary powers to suspend the rules. The Commission were not asked to consider—and in fact have not considered in detail—the point relating to the interpretation of rule (d) in Article 30 of the Code (relating to the fixing of the types of genera by absolute tautonymy) discussed in paragraphs 10 to 12 above. In reaching their decision, the International Commission have, however, given due weight to the special considerations in regard to the interpretation of the foregoing provision of Article 30 which have been advanced in this case.

15. In recording his vote in favour of the proposal submitted by Dr. Reinhart, Commissioner Francis Hemming, as Secretary to the Commission, entered the following note in the record relating to this case :—

In dealing with genera proposed by early authors without originally designated or indicated type, it is often extremely difficult to determine with certainty the work in which a type was first validly selected under rule (g) in Article 30 of the Code. The difficulties so involved are very well illustrated by the case of *Arca* Linnaeus. Until 1927 Gray's designation (1847) of *Arca noae* Linnaeus had been almost universally accepted for over eighty years; Cox then drew attention to the prior designation of *Arca tortuosa* Linnaeus by Children (1823); but within three years of the publication of Cox's paper Stewart (1930) drew attention to a still earlier work in which Schumacher (1817) had taken certain action which was capable of being interpreted as constituting the designation of *Arca antiquata* Linnaeus as the type. Even since the submission of the present application to the Commission, attention has been drawn by Iredale to still another type designation for the genus *Arca* Linnaeus, namely that of *Arca barbata* Linnaeus by Anton (1839).

In cases of this kind there is clearly always a chance that some author may detect in the literature some type designation of still earlier date than any of those so far detected. This has already happened twice in the case of *Arca* Linnaeus, first (as shown above) by Cox and later by Stewart, and the possibility of it happening again cannot be altogether excluded. Constant changes in the genotype of a genus lead to great confusion and are open to strong objection. It is therefore very important that the *Opinion* now to be issued by the Commission on this subject should be so drafted as to obviate the possibility of any discussion, if later there is discovered a type designation for *Arca* Linnaeus of older date than any so far known. This object can best be secured by following the precedent set by the Commission at Lisbon in 1935 when dealing with certain similar cases in the Order Hymenoptera submitted by Professor Chester Bradley (Lisbon Session, 3rd Meeting, Conclusion 2),⁷ that is to say to use their plenary powers first to set aside all type designations for *Arca* Linnaeus, 1758, made prior to the date of the Commission's decision in regard thereto. Having done this, the International Commission can use their plenary powers to designate *Arca noae* Linnaeus, 1758, as the type of the genus. The name *Arca* Linnaeus, with the type so designated, could then readily be added to the *Official List of Generic Names in Zoology* as proposed.

⁷ For the text of the Conclusion here referred to see 1943, *Bull. zool. Nomencl.* 1 : 27-30.

16. At the time of the outbreak of war in Europe in September 1939, eight Commissioners had voted in favour of the suspension of the rules in the present case and none had voted against that course. For a time it was impossible to make any further progress in this matter, but in January 1943 Commissioner Hemming, as Secretary to the Commission, wrote to all those Members of the International Commission who had not voted on this case and who were resident in countries with which postal communications were still open and urged them to record their votes in this case. As a result, four additional affirmative votes were received between 14th February and 25th October 1943. The number of votes so received were more than sufficient to secure the adoption of the present *Opinion* and accordingly on 25th October 1943 the Secretary to the International Commission, acting in virtue of the powers conferred upon him in that behalf by Article 7 of the By-Laws, closed the ballot in this case.

III.—THE CONCLUSION REACHED BY THE INTERNATIONAL COMMISSION.

17. The decision taken by the Commission in the present case is :—

(a) under suspension of the rules :—

(i) to set aside all type designations for *Arca* Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 693 (Class Pelecypoda, Order Filibranchiata) made prior to the date of this *Opinion*; and

(ii) to designate *Arca noae* Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 693 as the type of *Arca* Linnaeus, 1758;

(b) to add the name *Arca* Linnaeus, 1758, with the type specified in (a)(ii) above, to the *Official List of Generic Names in Zoology* as Name No. 622.

18. The following twelve (12) Commissioners voted in favour of the present *Opinion* :—

do Amaral; Apstein; Cabrera; Calman; Chapman; Dymond; Fantham; Hemming; Jordan; Peters; Richter; and Stiles.

19. No Commissioner voted against the present *Opinion*.

20. The following four (4) Commissioners did not vote on the present *Opinion* :—

Esaki; Pellegrin; Stejneger; and Stone.

21. In addition two (2) Commissioners, namely Commissioners Bolivar y Pieltain and Silvestri, who were members of the Commission at the time when the ballot on this case was opened, resigned their membership of the Commission without having voted on the present *Opinion*.

22. The following four (4) Commissioners, namely Commissioners Arndt, di Caporiacco, von Hankó, and Jaczewski, were elected members of the Commission during the later stages of the ballot on this case and did not take part in its consideration.

IV.—AUTHORITY FOR THE ISSUE OF THE PRESENT *OPINION*.

WHEREAS the Ninth International Congress of Zoology at its meeting held at Monaco in March 1913, adopted a Resolution conferring upon the International Commission on Zoological Nomenclature, acting for the International Congress of Zoology, Plenary Power to suspend the rules as applied to any given case, where, in the judgment of the Commission, the strict application of the said rules would clearly result in greater confusion than uniformity, provided that not less than one year's notice of the possible suspension of the rules as applied to the said case should be given in two or more of five journals named in the said Resolution and provided that the vote in the Commission was unanimously in favour of the proposed suspension of the rules; and

WHEREAS the suspension of the rules is required to give valid force to the provisions of the present *Opinion* as set out in the summary thereof; and

WHEREAS not less than one year's notice of the possible suspension of the rules as applied to the present case has been given to two or more of the journals referred to in the Resolution adopted by the Ninth International Congress of Zoology at its meeting held at Monaco in March 1913; and

WHEREAS the vote in the Commission on the present case was unanimously in favour of the issue of an *Opinion* in the terms of the present *Opinion*;

NOW, THEREFORE,

I, FRANCIS HEMMING, Secretary to the International Commission on Zoological Nomenclature, acting in virtue of all and every the powers conferred upon me in that behalf by reason of

holding the said Office of Secretary to the International Commission, hereby announce the said *Opinion* on behalf of the International Commission, acting for the International Congress of Zoology, and direct that it be rendered and printed as *Opinion* Number One Hundred and Eighty Nine (*Opinion* 189) of the said Commission.

In faith whereof I, the undersigned FRANCIS HEMMING, Secretary to the International Commission on Zoological Nomenclature, have signed the present *Opinion*.

DONE in London, this fifth day of October, Nineteen Hundred and Forty Four, in a single copy, which shall remain deposited in the archives of the International Commission on Zoological Nomenclature.

*Secretary to the International Commission
on Zoological Nomenclature.*

FRANCIS HEMMING

THE PUBLICATIONS OF THE COMMISSION.

(obtainable at the Publications Office of the Commission at 41, Queen's Gate, London, S.W.7.)

Bulletin of Zoological Nomenclature.

This journal has been established by the International Commission as their Official Organ in order to provide a medium for the publication of:—

- (a) proposals on zoological nomenclature submitted to the International Commission for deliberation and decision;
- (b) comments received from, and correspondence by the Secretary with, zoologists on proposals published in the *Bulletin* under (a) above; and
- (c) papers on nomenclatorial implications of developments in taxonomic theory and practice.

The *Bulletin* was established in 1943. Part 5 has now been published. Parts 6 and 7 are in the press.

Opinions and Declarations Rendered by the International Commission on Zoological Nomenclature.

The above work is being published in three volumes concurrently, namely:—

Volume 1. This volume will contain *Declarations* 1–9 (which have never previously been published) and *Opinions* 1–133 (the original issue of which is now out of print). Parts 1–20 (containing *Declarations* 1–9 and *Opinions* 1–11) have now been published. Further parts will be published shortly.

Volume 2. This volume will be issued in 52 Parts, comprising all the decisions taken by the International Commission at their meeting at Lisbon in 1935, namely *Declarations* 10–12 (with Roman pagination) and *Opinions* 134–181 (with Arabic pagination). Part 52 will contain the index and title page of the volume. Parts 1–35, containing *Declarations* 10–12 and *Opinions* 134–165, have now been published. Further Parts will be published shortly.

Volume 3. This volume, which commenced with *Opinion* 182, will contain the *Opinions* adopted by the International Commission since their meeting at Lisbon in 1935. Parts 1–8 (containing *Opinions* 182–189) have now been published. Further Parts will be published as soon as possible.

APPEAL FOR FUNDS

The International Commission appeal earnestly to all institutions and individuals interested in the development of zoological nomenclature to contribute, according to their means, to the Commission's Special (Publications) Fund. Of the total sum of £1,800 required to enable the Commission to issue all the publications now awaiting printing, donations amounting to £969 16s. 1d. were received up to 30th June 1945. Additional contributions are urgently needed in order to enable the Commission to continue their work without interruption. Contributions of any amount, however small, will be most gratefully received.

Contributions should be sent to the International Commission at their Publications Office, 41, Queen's Gate, London, S.W. 7, and made payable to the "International Commission on Zoological Nomenclature or Order" and crossed "Account payee. Coutts & Co."